D.E.

2. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said plurality of enable signals are generated as a set of sequentially occurring signals to cause said processing units to process said video data.

D.E.

3. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said plurality of processing units comprise a motion detector for detecting motion in individual frames of said video data, and wherein said video deinterlacing system further comprises means for causing capture of a frame of said video as a function of the motion detected by said motion detector.

D.E.

4. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said plurality of processing units comprise a cross-color suppressor for removing cross-coloring introduced in a chroma component of said non-interlaced video data due to overlap of luma spectral content.

D.E.

5. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said plurality of processing units comprise a line doubler for performing line doubling as a function of motion-weighted spatial and temporal interpolation.

D.E.

6. (unchanged) A video deinterlacing system as set forth in claim 5 wherein said plurality of processing units comprise a compression filter for removing artifacts in said non-interlaced video data.

D.E.

7. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said plurality of processing units comprise a video enhancement module for performing artifact removal and edge sharpening on said non-interlaced video data.

D.E.

8. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said plurality of processing units comprise a post-processing module for downsampling of said non-interlaced video data.

D.E.

9. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said data valid signal is generated by a source of said interlaced video data and wherein deactivation of said data valid signal by said source halts operation of said processing units.

D.E.

10. (unchanged) A video deinterlacing system as set forth in claim 9 wherein said non-interlaced data generated by said video deinterlacing system is received by a data sink and wherein said data valid signal is further generated by said data sink and wherein deactivation of said data valid signal by said data sink halts operation of said processing units.

D.E.

11. (unchanged) A video deinterlacing system as set forth in claim 1 further comprising:

a motion detector, responsive to said non-interlaced data for detecting, frame by frame, motion in images represented by said non-interlaced data;

a motion sum accumulator, responsive to said motion detector, for storing a motion value indicative of an amount of motion in a frame;

a status register, responsive to said motion sum accumulator, for storing said motion value; and

a frame capture module, responsive to a changeable motion threshold range, indicative of a desired range of motion in a frame, and to said motion

value, for causing capture of said frames of video characterized by a motion value within said motion threshold range.

12. (unchanged) A video deinterlacing system as set forth in claim 1 further comprising:

a stall counter, responsive to stalling of said deinterlacing system, for generating a stall value, indicative of an amount of time elapsed during said stall.

13. (amended) A video deinterlacing system as set forth in claim 10 further comprising:

means for causing disabling of at least a first image enhancement function performed on said [input frames of said] non-interlaced data.

14. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said non-interlaced data generated by said video deinterlacing system is received by a data sink and wherein said data valid signal is generated by said data sink and wherein deactivation of said data valid signal by said data sink halts operation of said processing units.

15. (unchanged) A video deinterlacing system as set forth in claim 1 wherein said received interlaced video data comprises a plurality of input fields and wherein said non-interlaced data comprises a plurality of corresponding output frames and wherein parameters indicative of processing functions performed by said processing units are updated upon generation of each of said output frames.

16. (unchanged) A video deinterlacing system as set forth in claim 1 characterized by a predetermined number of processing states, wherein said processing states are executed upon receipt of said data valid signal.

17. (amended) A video deinterlacing system as set forth in claim 1 wherein said non-interlaced video data is time-delayed from the corresponding [non-] interlaced data by a field delay.

18. (amended) A video deinterlacing system as set forth in claim [17] 1 wherein said non-interlaced video data is characterized by a pixel delay and a line delay from said interlaced video data.

19. (amended) Apparatus for generating de-interlaced video data in response to non-deterministically received interlaced video data, comprising:

a processing pipeline, responsive to said interlaced video data, for generating frames of said non [de-]interlaced video data in response to said received interlaced video data, said processing pipeline performing a plurality of processing functions characterized by different clocking rates, each of said clocking rates related to a base rate; and

a timing control unit responsive to arrival of said interlaced video data for generating a plurality of multi-rate control signals to enable said different clocking rates.

20. (unchanged) Apparatus as set forth in claim 19 characterized by an effective frame rate corresponding to an effective frame of a source of said non-deterministically received interlaced video data.

Please cancel claim 21 without prejudice.

21~~22~~. (amended) A video frame capture system [as set forth in claim 21 further] comprising[,]:

a motion detector, responsive to input frames of video data, for frame-by-frame detection of motion in images represented by said video data;

a motion sum accumulator, responsive to said motion detector, for storing a motion value indicative of an amount of motion in a frame;

a status register, responsive to said motion sum accumulator, for storing said motion value;

jointly responsive to said motion value and a changeable motion threshold range which is indicative of a desired range of motion in a frame, capturing said frames of video characterized by a motion value within said motion threshold range; and

means for [causing] disabling [of] at least a first image enhancement function performed on said input frames of video data.

Please add new claims 23 through 41 as follows:

22~~--23~~. A method of generating non-interlaced video data from non-deterministically received interlaced video data, the method comprising:

receiving interlaced video data including a data valid signal indicative of arrival of at least a portion of the interlaced video data;

generating a base clock rate;

processing the interlaced video data at a first clock rate which is related to the base clock rate;

processing the interlaced video data at at least one other clock rate which is related to the base clock rate but different from the first clock rate; and

responsive to the base clock rate and the data valid signal, generating a plurality of enable signals, each of the enable signals enabling a corresponding one of the first clock rate or the other clock rates.

23 ~~24~~. The method of claim 22 ~~23~~ wherein the step of generating a plurality of enable signals further comprises generating a set of sequentially occurring enable signals.

24 ~~25~~. The method of claim 22 ~~23~~ wherein

at least one of the processing steps further comprises detecting motion in individual frames of the video data; and

the method further comprises capturing at least one of the individual frames of video data as a function of the detected motion.

25 ~~26~~. The method of claim 12 ~~23~~ wherein at least one of the processing steps further comprises removing cross-coloring introduced in a chroma component of the deinterlaced video data due to overlap of luma spectral content.

a4 Cont.

26 ~~27~~. The method of claim 22 ~~23~~ wherein at least one of the processing steps further comprises line doubling as a function of motion-weighted spatial and temporal interpolation.

27 ~~28~~. The method of claim 22 ~~23~~ where in at least one of the processing steps further comprises removing artifacts from the non-interlaced video data.

28 ~~29~~. The method of claim 27 ~~28~~ wherein at least one of the processing steps further comprises edge sharpening the non-interlaced video data.

37

29 22
~~30~~. The method of claim ~~23~~ wherein at least one of the processing steps further comprises downsampling of the non-interlaced video data.

30 22
~~31~~. The method of claim ~~23~~ further comprising:

selectively deactivating the data valid signal to thereby halt at least one of the processing steps.

31 22
~~32~~. The method of claim ~~23~~ further comprising:

detecting, frame by frame, motion in images represented by the non-interlaced video data;

generating motion values which are each indicative of the motion detected in a given frame;

storing the motion values; and

responsive to motion values falling within a changeable motion threshold range which is indicative of a desired range of motion in a given frame, capturing the frames of video data.

a4 Cont.

32 22
~~33~~. The method of claim ~~23~~ further comprising:

responsive to stalling of the method, generating a stall value indicative of the time elapsed during the stall.

33 31
~~34~~. The method of claim ~~32~~ wherein

at least one of the processing steps includes enhancing the non-interlaced video data; and

the method further comprises selectively disabling the step of enhancing.

38

34. The method of claim 22 further comprising:

receiving the non-interlaced video data generated by the deinterlacing method; and

selectively deactivating the data valid signal to thereby halt at least one of the processing steps.

35. The method of claim 22 wherein

the processing steps result in the generation of a plurality of output frames of non-interlaced video data, the output frames each having associated therewith process parameters indicative of the processing steps previously performed on the video data; and

the method further comprises updating at least one of the process parameters upon generation of the output frames.

36. The method of claim 22 further comprising:

executing a predetermined number of processing states upon receipt of the data valid signal.

37. The method of claim 22 further comprising:

delaying the non-interlaced video data relative to the corresponding interlaced video data, the delay being a field delay.

38. The method of claim 37 further comprising:

delaying the non-interlaced video data relative to the corresponding interlaced video data, the delay being a pixel delay and a line delay.

39. A method of generating non-interlaced video data from non-deterministically received interlaced video data, the method comprising:

receiving interlaced video data;

responsive to the step of receiving interlaced video data, generating a plurality of multi-rate control signals; and

responsive to the steps of receiving and generating, performing a plurality of processing functions characterized by different clocking rates to thereby create frames of non-interlaced video, each of the clocking rates being enabled by at least one of the multi-rate control signals and being related to a base clocking rate.

41. The method of claim 40 wherein the base clocking rate is related to a frame rate of the received interlaced video data.--

REMARKS

Claims 1-22 were presented for examination via the original Application. While claims 1-20 were allowed and claim 22 was indicated as containing allowable subject matter, claim 21 was rejected. In response, rejected claim 21 is being canceled and claim 22 is being amended as suggested by the Examiner. Additionally, a number of minor errors contained in dependent claims 13 and 17-19 are being corrected and new method claims 23-41 are being added. While a number of minor changes are being made to the specification, no new matter is being added. Reconsideration of the above-identified Application as amended and allowance of all presently pending claims 1-20 and 22-41 are hereby respectfully requested.

Pursuant to the Examiner's suggestion of paragraph 1 of the Official Action, Applicant has reviewed and is amending the specification to correct a number of minor